



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/987,044	11/13/2001	Kiyonori Yokoi	33035WC0231	6359

7590 04/15/2004

SMITH GAMBRELL & RUSSELL, L.L.P.
Suite 800
1850 M Street, N.W.
Washington, DC 20036

EXAMINER

NGUYEN, CHAU N

ART UNIT	PAPER NUMBER
----------	--------------

2831

DATE MAILED: 04/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/987,044

Applicant(s)

YOKOI ET AL.

Examiner

Chau N Nguyen

Art Unit

2831

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 March 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-22,24-27 and 29-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2,9,12,13 and 15 is/are allowed.
- 6) ☒ Claim(s) 1,4-8,10,11,14,16-22,24-27,29,30 and 33 is/are rejected.
- 7) ☒ Claim(s) 31 and 32 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

Claim 6 is objected to because of the following informalities: in claim 6, line 2, change "a" to --said--. Appropriate correction is required.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35

U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35

U.S.C. 103(a).

3. Claims 1, 10, 14, 16, 19-22, 25-27 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katsumata et al. (5,171,938) in view of Wessels et al. (5,614,319), Harada (5,118,905) and Carroll (5,061,823).

Katsumata et al. discloses a coaxial element wire (Fig. 7a) comprising a center conductor (111), a non-electrically conductive insulation layer (112) provided around the center conductor and in contact therewith, and an outer conductor (113) wherein the outer conductor is a ribbon-shaped conductor of a virtually rectangular cross-section, made out of copper (col. 7, line 38), helically wrapped around the insulation layer with one long side thereof facing the insulation layer, and has its four corners smoothed. Katsumata et al. also discloses the coaxial element wire being provided with a jacket (115) to form a coaxial cable.

Katsumata et al. does not specifically disclose the thickness of the insulation layer being 0.03 mm to 0.15 mm at a portion of the insulation layer where the thickness is smallest, the outer conductor obtained by pressing a round wire into a flat form, without annealing after pressing, nor the wrapping angle of the ribbon-

shaped conductor with respect to an axis of the coaxial element wire being more than 45 degrees.

Wessels et al. discloses a cable comprising an insulation layer having a thickness of less than 0.15 mm (col. 7, lines 47-49). It would have been obvious to one skilled in the art to provide the insulation of Katsumata et al. with a thickness of less than 0.15 mm as taught by Wessels et al. to provide a flexibility for the cable.

Harada discloses a coaxial cable comprising an outer conductor which is formed by a plurality of ribbon-shaped conductors. Harada discloses that the ribbon-shaped conductor is obtained by pressing a round wire into a ribbon-shaped wire. It would have been obvious to one skilled in the art to use a ribbon-shaped conductor which is formed by pressing a round wire for the ribbon-shaped conductor of Katsumata since a ribbon-shaped conductor formed from pressing a round wire would provide smooth corners as taught by Harada.

Although not disclosed by the references, it is well-known in the art that annealing a metal is to increase the hardness of the metal, and the ribbon-shaped conductor of Katsumata or Harada is used for either helical winding or braiding. Therefore, annealing the conductor after pressing would make the conductor harder which would be difficult for winding or braiding the conductor. Accordingly, it

would have been obvious to one skilled in the art to not annealing the ribbon-shaped conductor, after pressing, in the modified Katsumata cable to ease the step of helically winding the conductor around the insulation.

Katsumata discloses that a plurality of the ribbon-shaped conductors can be used, in such case the conductors can be wound in parallel (the same direction) to each other or in intersecting relation (opposite direction) (col. 6, lines 53-56) (re claims 10, 14, 19-21 and 25-27).

Carroll discloses a cable comprising an outer conductor (6) which is wrapped around an insulation and wrapped with an angle of more than 45° with respect to the axis of the wire. It would have been obvious to one skilled in the art to wrap the outer conductor of Katsumata et al. with an angle of more than 45° with respect to the axis of the wire to provide the cable with kinking resistance as taught by Carroll (col. 3, lines 55-56) (re claims 1, 16 and 22).

Re claim 30, it would have been obvious to one skilled in the art to use PFA for the insulation layer of Katsumata since PFA is known in the art for being used as electrical insulation material and being known for its excellent flame retardancy.

4. Claims 4, 6, 17, 24 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katsumata et al. in view of Wessels et al., Harada and Carroll as applied to claims 1, 16 and 22 above, and further in view of Sass (4,552,989).

Sass discloses a cable comprising a plurality of coaxial cables being twisted together and a jacket. It would have been obvious to one skilled in the art to use a plurality of the modified coaxial cables of Katsumata et al. to form a multi coaxial cable as taught by Sass for multiple transmitting purposes.

5. Claims 5, 7 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katsumata et al. in view of Wessels et al., Harada, Carroll and Sass as applied to claims 4 and 17 above, and further in view of Ijff et al. (4,358,636).

Ijff et al. discloses a multiple coaxial cable comprising a plurality of coaxial cables wherein the outer conductors of the coaxial cables are in contact. Ijff et al. also discloses coaxial cables being disposed at a position where the cables are subjected to bending (col. 1). It would have been obvious to one skilled in the art to contact the outer conductors of the coaxial cables in the modified Katsumata et al. cable together (a plurality of coaxial wires without the jacket 115 being bundled together) so that optimum signal transmission is realized as taught by Ijff et al. It

would also have been obvious to one skilled in the art to use the modified cable of Katsumata et al. at a position where the cables are subjected to bending since the modified cable of Katsumata et al. is flexible.

6. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Katsumata et al. in view of Wessels et al., Harada and Carroll as applied to claim 1 above, and further in view of Martin (3,334,177).

Martin discloses a cable comprising an outer conductor (12) being spirally wrapped (helically wrapped) with adjacent wrappings of the outer conductor butt against one another. It would have been obvious to one skilled in the art to modify the outer conductor of Katsumata such that the spiral or the helical adjacent wrappings of the outer conductor butt against one another as taught by Martin to improve the shielding effect for the cable.

7. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Katsumata et al. in view of Wessels et al., Harada and Carroll as applied to claim 10 above, and further in view of Peterson (5,354,954).

Peterson discloses a cable comprising two ribbon-shaped conductors (18,20) helically wrapped on an insulation core (16) wherein the second ribbon-shaped

conductor overlaps the first ribbon-shaped conductor (Figs 2 and 3). It would have been obvious to one skilled in the art that in the case two (a plurality) of ribbon-shaped conductors are used in the Katsumata cable, to provide the two conductors in the same direction and to provide the second conductor overlapping the first conductor as taught by Peterson. With this modification, the frictionally induced fracture and failure in the cable is greatly reduced (col. 4, lines 46-49).

8. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Katsumata et al. (5,171,938) in view of Carroll.

Katsumata et al. discloses a coaxial wire element wire comprising a center conductor, a non-electrically conductive insulation layer provided around the center conductor and in contact therewith, and an outer conductor helically wrapped around the insulation layer at wrapping angle, with respect to the axial axis of the coaxial element wire, with one long side of the outer conductor facing the insulation layer, the outer conductor being copper wire having a ribbon shape with a virtually rectangular cross-section, and the one long side. Katsumata et al. does not specifically disclose the wrapping angle being more than 45 degrees. Carroll discloses a cable comprising an outer conductor (6) which is wrapped around an insulation and wrapped with an angle of more than 45° with respect to

the axis of the wire. It would have been obvious to one skilled in the art to wrap the outer conductor of Katsumata et al. with an angle of more than 45° with respect to the axis of the wire to provide the cable with kinking resistance as taught by Carroll (col. 3, lines 55-56) (re claims 1, 16 and 22).

Allowable Subject Matter

9. Claims 2, 9, 12, 13, and 15 are allowed.
10. Claims 31 and 32 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

Applicant's arguments with respect to claims 1, 16, 22 and 33 have been considered but are moot in view of the new ground(s) of rejection.

Summary

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.**

See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Communication

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chau N Nguyen whose telephone number is 571-272-1980. The examiner can normally be reached on Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean Reichard can be reached on 571-272-2800 ext 31.

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Chau N Nguyen
Primary Examiner
Art Unit 2831